

INTERNATIONAL SEARCH REPORT

Intern: 31 Application No
PCT/IB2004/004311

A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 C07F9/06 A61K31/66 A61K39/39 A61P35/00 A61P31/00
A61P37/00

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 C07F

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal , CHEM ABS Data, BEILSTEIN Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	<p>DATABASE CA 'Online! CHEMICAL ABSTRACTS SERVICE, COLUMBUS, OHIO, US; KOEHLER, H. ET AL: "Pseudo-chalcogen compounds. IX. The cyanamidolytic reaction of phosphorus oxide (P4O10). II" XP002329669 retrieved from STN Database accession no. 1976:440307 abstract & ZEITSCHRIFT FUER ANORGANISCHE UND ALLGEMEINE CHEMIE , 423 (1), 15-20 CODEN: ZAACAB; ISSN: 0044-2313, 1976, ----- -/-</p>	1

☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

° Special categories of cited documents :

"A" document defining the general state of the art which is not considered to be of particular relevance
"E" earlier document but published on or after the international filing date
"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
"O" document referring to an oral disclosure, use, exhibition or other means
"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.
"&" document member of the same patent family

Date of the actual completion of the international search

30 May 2005

Date of mailing of the international search report

18. 10. 2005

Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2
NL - 2280 HV Rijswijk
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,
Fax: (+31-70) 340-3016

Authorized officer

Richter, H

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(^Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT		
Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	<p>DATABASE CA Online! CHEMICAL ABSTRACTS SERVICE, COLUMBUS, OHIO, US; WEBER, A. L. ET AL: "Simultaneous peptide and oligonucleotide formation in mixtures of amino acid, nucleoside triphosphate, imidazole, and magnesium ion" XP002329670 retrieved from STN Database accession no. 1977:479963 abstract & BIOSYSTEMS , 8(4), 277-86 CODEN: BSYMO; ISSN: 0303-2647, 1977,</p>	1
X	<p>DATABASE CA Online! CHEMICAL ABSTRACTS SERVICE, COLUMBUS, OHIO, US; YAMANAKA, JUNPEI ET AL: "Condensation of oligoglycines with trimeta- and tetrametaphosphate in aqueous solutions" XP002329671 retrieved from STN Database accession no. 1989:71465 abstract & ORIGINS OF LIFE AND EVOLUTION OF THE BIOSPHERE , 18(3), 165-78 CODEN: OLEBEM; ISSN: 0169-6149, 1988,</p>	1
X	<p>DATABASE CA 'Online! CHEMICAL ABSTRACTS SERVICE, COLUMBUS, OHIO, US; SATO, EISUKE ET AL: "Bimane conjugates of 5-halogenouridylic acids as fluorogenic substrates for phosphodiesterase I" XP002329672 retrieved from STN Database accession no. 1995:112825 abstract & JOURNAL OF CHEMICAL RESEARCH, SYNOPSES , (10), 390-1 CODEN: JRPSDC; ISSN: 0308-2342, 1994,</p>	1
X	<p>DATABASE CA Online! CHEMICAL ABSTRACTS SERVICE, COLUMBUS, OHIO, US; MUSTAIEV, ARKADY ET AL: "Topology of the RNA polymerase active center probed by chimeric rifampicin-nucleotide compounds" XP002329673 retrieved from STN Database accession no. 1995:258978 abstract -/-</p>	1

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Intern: I Application No
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...(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT		
Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	<p>& PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA , 91(25), 12036-40 CODEN: PNASA6; ISSN: 0027-8424, 1994,</p> <p>-----</p> <p>DATABASE CA Online! CHEMICAL ABSTRACTS SERVICE, COLUMBUS, OHIO, US; HARTMANN, EVAMARIE ET AL: "A novel pathway of peptide biosynthesis found in methanogenic Archaea" XP002329674 retrieved from STN Database accession no. 1995:371063 abstract</p> <p>& ARCHIVES OF MICROBIOLOGY , 162(6), 430-2 CODEN: AMICCW; ISSN: 0302-8933, 1994,</p> <p>-----</p>	1
X	<p>DATABASE CA Online! CHEMICAL ABSTRACTS SERVICE, COLUMBUS, OHIO, US; YANAGIDANI, JUN ET AL: "Purification and characterization of NAD: penicillamine ADP transferase from Bacillus sphaericus. A novel NAD-dependent enzyme catalyzing phosphoramidate bond formation" XP002329675 retrieved from STN Database accession no. 1999:61574 abstract</p> <p>& JOURNAL OF BIOLOGICAL CHEMISTRY , 274(2), 795-800 CODEN: JBCHA3; ISSN: 0021-9258, 1999,</p> <p>-----</p>	1
X	<p>DATABASE CA Online! CHEMICAL ABSTRACTS SERVICE, COLUMBUS, OHIO, US; KIM, SANG HUN ET AL: "Photobinding of ' gamma. -32P! ATP . gamma. -benzophenone to the surface of a polyurethane membrane in the preparation of a .beta. -particle-emitting balloon catheter" XP002329676 retrieved from STN Database accession no. 1999:646526 abstract</p> <p>& JOURNAL OF BIOMEDICAL MATERIALS RESEARCH , 48(5), 669-674 CODEN: JBMRBG; ISSN: 0021-9304, 1999,</p> <p>-----</p> <p>-/-</p>	1

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C(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT		
Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	DE 198 15 864 A1 (EUROPAEISCHES LABORATORIUM FUER MOLEKULARBIOLOGIE GERMANY) 14 October 1999 (1999-10-14) page 7, line 56 - page 8, line 35; figure 2	1
X	page 4, line 23 - line 35; claims 21-24 & DATABASE CA 'Online! CHEMICAL ABSTRACTS SERVICE, COLUMBUS, OHIO, US; FAULSTICH, KONRAD ET AL: "5'-Modified nucleotides and their use in molecular biology and medicine" retrieved from STN Database accession no. 1999:668147 abstract	9,11
X	& US 6 627 416 B1 (FAULSTICH KONRAD ET AL) 30 September 2003 (2003-09-30) column 5, line 44	11,12
X	----- DATABASE CA 'Online! CHEMICAL ABSTRACTS SERVICE, COLUMBUS, OHIO, US; RUDOLPH, MARKUS G. ET AL: "The novel fluorescent CDP-analogue (P.beta.)MABA-CDP is a specific probe for the NMP binding site of UMP/CMP kinase" XP002329677 retrieved from STN Database accession no. 2000:11855 abstract & PROTEIN SCIENCE , 8(12), 2697-2704 CODEN: PRClEI; ISSN: 0961-8368, 1999,	1
X	----- WO 00/18967 A1 (VARIAGENICS, INC., USA) 6 April 2000 (2000-04-06) page 58; figure 20 & DATABASE CA 'Online! CHEMICAL ABSTRACTS SERVICE, COLUMBUS, OHIO, US; STANTON, VINCENT P., JR. ET AL: "Nucleic acid analysis based on enzymic incorporation of modified nucleotides and chemical cleavage" retrieved from STN Database accession no. 2000:227825 abstract	1
X	----- WO 00/36152 A1 (LI-COR, INC., USA) 22 June 2000 (2000-06-22) figure 9 -/-	1

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C(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT		
Category "	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	<p>& DATABASE CA 'Online! CHEMICAL ABSTRACTS SERVICE, COLUMBUS, OHIO, US; WILLIAMS, JOHN G. K.: "Nucleic acid sequencing of single molecules by polymerase extension releasing labeled diphosphates" retrieved from STN Database accession no. 2000:421345 abstract</p> <p>-----</p> <p>DATABASE CA Online! CHEMICAL ABSTRACTS SERVICE, COLUMBUS, OHIO, US; SAFRONOV, I. V. ET AL: "Reagents for modification of protein-nucleic acid complexes: III. Site-specific photomodification of elongation complex of DNA polymerase .beta, with arylazide derivatives of primers sensitized with fluorescent ATP .gamma.-amides" XP002329678 retrieved from STN Database accession no. 2001:799287 abstract</p> <p>& RUSSIAN JOURNAL OF BIOORGANIC CHEMISTRY (TRANSLATION OF BIOORGANICHESKAYA KHIMIYA) , 27(5), 330-339 CODEN: RJBCEJ; ISSN: 1068-1620, 2001,</p> <p>-----</p>	1
X	<p>DATABASE CA Online! CHEMICAL ABSTRACTS SERVICE, COLUMBUS, OHIO, US; SHCHEPINOV, MIKHAIL S. ET AL: "Matrix-induced fragmentation of P3'-N5' phosphoramidate-containing DNA: high-throughput MALDI-TOF analysis of genomic sequence polymorphisms" XP002329679 retrieved from STN Database accession no. 2001:823873 abstract</p> <p>& NUCLEIC ACIDS RESEARCH , 29(18), 3864-3872 CODEN: NARHAD; ISSN: 0305-1048, 2001,</p> <p>-----</p>	1
X	<p>DATABASE CA Online! CHEMICAL ABSTRACTS SERVICE, COLUMBUS, OHIO, US; LU, ZICHUN J. ET AL: "Enzymatic properties of S-adenosyl methionine synthetase from the archaeon Methanococcus jannaschii" XP002329680 retrieved from STN Database accession no. 2002:371240 abstract</p> <p>-----</p>	1

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C(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT		
Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	& JOURNAL OF BIOLOGICAL CHEMISTRY , 277(19) , 16624-16631 CODEN: JBCHA3; ISSN: 0021-9258, 2002, ----- wo 97/21452 A2 (ADVANCED MAGNETICS, INC. , USA) 19 June 1997 (1997-06-19) cl aims 1-4, 16-19 & DATABASE CA 'Onl ine! CHEMICAL ABSTRACTS SERVICE, COLUMBUS, OHIO, US; JOSEPHSON, LEE ET AL: "Macromolecul ar prodrugs of nucleotide analogs" retri eved from STN Database accessi on no. 1997:511689 abstract -----	1,9, 11, 12
X	DATABASE BEILSTEIN 'Onl ine! BEILSTEIN INSTITUTE FOR ORGANIC CHEMISTRY, FRANKFURT-MAIN, DE; 31 December 1990 (1990-12-31) , XP002329874 Database accessi on no. BRN 4287288 abstract & SATO ET AL. : CHEM. PHARM. BULL. , vol . 38, no. 8 , 1990 , pages 2287-2289, -----	1
X	DATABASE BEILSTEIN 'Onl ine! BEILSTEIN INSTITUTE FOR ORGANIC CHEMISTRY, FRANKFURT-MAIN, DE ; 27 June 1988 (1988-06-27) , XP002329875 Database accessi on no. BRN 7262054, 7263441 abstract & TSUHAKE ET AL. : CHEM. BULL. SOC. JAPN. , vol . 56, no. 5 , 1983, pages 1372-1377, -----	1
A	ZWIERZAK A: SYNTHESIS , vol . 11, 1982 , pages 920-922, XP001206357 reacti on 3 —> 5 page 920, col umn 2 - page 921 , col umn 1 ; tabl e 1	15, 17
A	& DATABASE BEILSTEIN 'Onl ine ! BEILSTEIN INSTITUTE FOR ORGANIC CHEMISTRY, FRANKFURT-MAIN, DE ; 27 June 1988 (1988-06-27) , XP002329876 Database accessi on no. REACTION I.D: 1606659 abstract -----	15, 17

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International application No.
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Box II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:

2. ☐ Claims Nos.:
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:

3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

see additional sheet

1. ☐ As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.

2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.

3. ☐ As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:

4. ☒ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

1-17, 19-20

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☐ No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claims: 1-17,19-20

gamma, delta T cell activator, preparation and use

2. claim: 18

method for preparing
(E)-2-(4-azido-2-methyl but-2-enyl oxy)tetrahydro-2H-pyran

3. claims: 21, 22

activated gamma delta T-cell and use

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Information on patent family members

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Patent document cited in search report		Publication date	Patent family member(s)		Publication date
DE 19815864	AI	14-10-1999	CA	2327286	AI 21-10-1999
			wo	9953087	A2 21-10-1999
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wo 9721452	A2	19-06-1997	NONE		